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# Solidarity-based financing of medical evacuations to improve access to emergency care, Keita Medical District (Niger)

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**Abstract.**

**Introduction:** In recent years, a number of African countries, including Niger, have adopted policies abolishing user fees at point of service, targeting categories of people or services. These policies do not take account of geographical and financial accessibility for cases that require medical evacuation from primary to secondary level. This paper documents an experiment illustrating the importance of considering the place of medical evacuation in fee exemption schemes for vulnerable population groups.

**Methods:** Quantitative analysis of routine statistical data was performed pre- and post-experiment.

The data was taken from monthly activity and financial reports supplied by the 16 IHCs (Integrated Health Centers), the district hospital and the regional hospital for the period from 2008 to 2010, and was analyzed using MS Excel.

**Results:** A medical evacuation reserve fund was set up, with 77% of it made up of "extra centime" payments from the free-healthcare target groups.

A large increase (more than twofold) was recorded in the number of cases evacuated, from 191 in 2008 to 460 in 2009. Detailed analysis shows that more than 72% of the people evacuated belong to the free-healthcare target groups. The average transportation cost for an evacuation is about €37.

**Conclusion:** The introduction of a solidarity-based financing mechanism resulted in an increase in the number of evacuations, for which the average cost was too high for most rural households. Policies aimed at abolishing direct user fees by integrating the cost of medical evacuations offer an effective strategy for health risk coverage and for counteracting the impoverishment caused by ill health.

**Keywords.** Solidarity-based financing, Medical evacuation, Extra centime, Niger

## 1. Introduction.

In the last few years, one of the solutions envisaged for improving access to healthcare – seen by some as a step toward universal access – is to remove part of the financial barrier to healthcare access by attacking direct payment. One solution, conceived from the early days of the implementation of the Bamako Initiative, was to exempt the very poor from payment on a case-by-case basis. But very few countries actually put such systems in place, and the few experiments that were put in place proved ineffective (2; 5; 12).

In light of these difficulties, the solution trialed by a number of African countries in recent years has been to abolish payment for everyone – or at least for easily identified categories of people or services – instead of making exemptions on a case-by-case basis. This approach is supported by many development cooperation actors[1]. In this context, a ministerial decree was published in Niger in 2006 making healthcare free for children under 5 years old and pregnant women.

1 World Bank, ECHO (European Commission Humanitarian Office), WHO (World Health Organization), Canadian, British and Danish cooperation organizations, NGOs

These measures effectively put an end to user fees at point of service for these target groups, leading to an improvement in health service uptake rates. However, this exemption system only covered treatment costs: for cases that required medical evacuation, the cost of transportation was borne by the patient. To get around this financial obstacle in Keita district[2], initiatives were developed to create a medical evacuation system. These initiatives still suffered from inconsistency in that patients had to pay for the journey from the health post to the IHC, and from the IHC to the district hospital, whereas the rest of the transfer to the regional hospital was free. To help solve this problem, the DHMT[3] – in collaboration with the humanitarian NGO MdM France[4] and with funding from ECHO – set up a pilot scheme designed to improve medical evacuations by acting on the geographical and financial barriers. This involved a mechanism built around three components:

1. The implementation, starting in May 2009, of a solidarity-based financing mechanism for medical evacuations known as the "extra centime" (*centime additionnel*). This involves levying an extra centime – in fact 100 FCFA or 15 euro cents – on each new medical consultation (curative, prenatal, family planning, assisted childbirth) in order to constitute a fund to finance medical evacuations from the health posts and IHCs to the district hospital at Keita or the regional hospital at Tahoua.
2. From May to December 2009, the NGO subsidized the extra centime for people in the free-healthcare target group as defined in 2006.
3. A money collection system, running alongside the evacuation system, was organized from the health post to the district hospital. Patients are covered from the moment they come into contact with the health services.[5] The funds collected are distributed between the health posts and the IHCs, and a main account is opened in the district capital.[6]
4. The entire system of collection and disbursement is under the responsibility of the departmental Health Committee7, which organizes monthly fund collection and monitoring visits to each of the district's 16 IHCs. The funds collected by each of the district's 55 working health posts are paid in to the IHC on which they depend.
5. Logistical support in the form of an ambulance service, the installation of a district-wide telecommunication system[8] and a range of medical evacuation management tools.[9]

During the implementation stage, this approach raised questions such as: Does setting up a solidarity-based financing mechanism for medical evacuations help improve access to emergency care? How much does it cost to transfer a case requiring medical evacuation, and how much of a financial barrier does that represent? This paper sets out to answer those questions, by demonstrating the value of integrating the medical evacuation subsidy into user payment abolition policies.

## 2. Methods

The method used consisted in a quantitative analysis of medical unit statistics before and after the introduction of the "extra centime" approach:

1. Routine data from the National Medical Information System (SNIS)10 collected from monthly activity reports supplied by the 16 IHCs, Keita District Hospital, and Tahoua Regional Hospital, covering the period from 2008 to 2010;
2. Financial data, collected along with the funds received by each medical unit during the Health Committee's monthly rounds. This data covers the period from May to December 2009, when the extra centime payment was covered by the NGO for the free-healthcare target groups. The NGO terminated this contribution In January 2010;
3. Statistical and financial data are also collected at the quarterly meetings held to assess the referral system, which bring together the DHMT, the members of the Health Committee, the nurses who run the IHCs, the members of the Management Committees (COGES)11, and the political and administrative authorities.

We used MS Excel for the analysis of the quantitative data before and after the implementation of the approach, which ran from January 2008 to April 2010.

## 3. Results

The figures below present the monthly trend in the number of cases evacuated between 2008 and 2010, and the breakdown of evacuees by age and by pathology.

2 Keita Health District is one of eight in the Tahoua Region (Niger)
3 DHMT: District Health Management Team *(Equipe Cadre de District, ECD)*
4 Médecins du Monde: removing financial barriers on access to high-quality healthcare for vulnerable populations is one of their priority causes
5 Health services: health outpost, IHC, district hospital
6 At health outpost level, 25% of the funds collected are managed at the health outpost itself, 25% are paid to the IHC on which it depends, and 50% are paid into the main account opened in the district capital. At IHC level, 50% are managed directly by the IHC and 50% are paid into the main account. In the case of the town-based IHC, 100% of the funds collected are paid into the main account.
7 Known as the COSAN *(Comité de Santé)*
8 Telecommunication system based on the mobile phone network, including all the IHCs, the DHMT, the ambulances, and the district hospital.
9 Reference / counter-reference forms, medevac log books, fuel stock management forms.
10 SNIS: *Système National d'Information Sanitaire*
11 COGES: *Comité de Gestion*

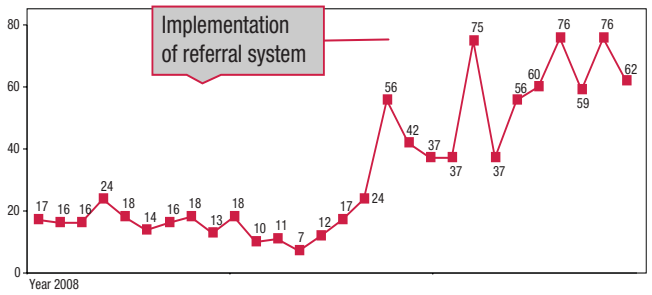


**Figure 1.** Monthly distribution of cases evacuated in 2008, 2009 & 2010, Keita Medical District

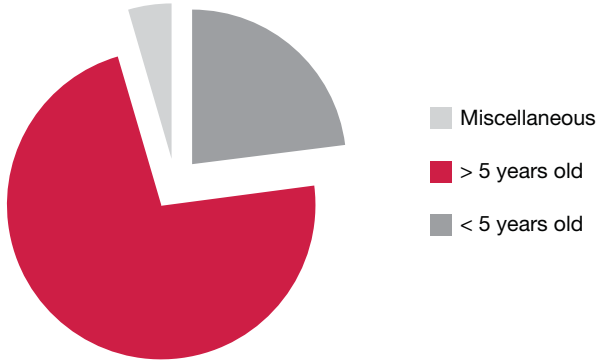


**Figure 2.** Breakdown of evacuees by age - May to Dec 2009, Keita Medical District

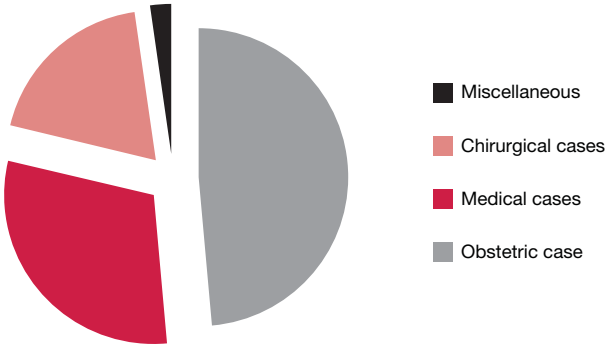


**Figure 3.** Breakdown of evacuees by pathology - May to Dec 2009, Keita Medical District

Note that the number of cases evacuated more than doubled, from 191 in 2008 to 460 in 2009. A strong upward trend is quickly evident, and is maintained throughout 2010. The age-bracket analysis shows that under-fives account for about 23% of evacuees, while the pathology-based approach reveals that ob-gyne cases represent about 49% of the total: more than 72% of evacuees therefore belong to the free-healthcare target populations.

The following table summarizes the funds mobilized for the implementation of the medical evacuation system and cost per evacuation from May to December 2009.

**Table 1.** Summary of costs, for 413 evacuations, May to Dec 2009, Keita Medical District

| Revenue | Income (FCFA) | Outlay (FCFA) |
|---|---|---|
| Subsidized "extra centimes" (free-healthcare target group) | 11 908 300 | |
| "Extra centimes" from non-exempted population | 3 776 100 | |
| Total "extra centime" contributions collected | 15 684 400 | |
| Expenditure | | |
| Fuel cost for evacuations | | 4 212 963 |
| Repairs & maintenance | | 4 103 935 |
| Fuel cost for collecting contributions | | 594 080 |
| Expenses of officials in charge of collecting contributions | | 120 000 |
| Fixed charge for communications | | 425 000 |
| Cost of reference/counter-reference forms | | 600 000 |
| Total expenditure (fuel costs + other expenses) | | 10 055 978 |
| Bottom line (total contributions collected - total spending) | 5 628 422 | |
| Average cost of fuel per evacuation | 10 201 | |
| Average cost of fuel + other expenses per evacuation | 24 349 | |

Notes : Keita Health District: population 293,630 in 2009, 16 Integrated Health Centers, 1 district hospital, 55 health posts, surface area 4,862 sq.km, population density 62 inhabitants / km2

Thanks to this approach, a medical evacuation reserve fund was set up. More than three quarters (77%) of the money collected comes from "extra centime" payments from the free-healthcare target population groups. The average transfer cost per evacuation is in the order of FCFA 24,349 or €37.

## 4. Discussion

The introduction of this new approach seems to have led to the increase in the number of cases evacuated, with the average monthly number of cases rising threefold from 16 to 57. Although the mechanism seems to have had a very rapid effect, it is difficult to measure its impact at this stage. A number of observations can, however, be made.

Measures to abolish financial participation for a category of users have led – as in other countries where such measures were introduced[12] – to a rise in health service uptake (1). As this lifting of the financial barrier operates at the point of

12 Uganda, Ghana, South Africa.

service, there remains the issue of geographical and financial accessibility for cases requiring medical evacuation from primary to secondary level. In the "extra centime" approach, the risks are shared between all health service users, and resources are pooled by a risk-spreading mechanism that generates cross-subsidies: the less-ill, who consume a type of health service at a given moment, help to pay for the evacuation of the more-ill. This approach, by decentralizing the management of patients from health outposts, has been effective in reducing the geographical barrier on access to secondary healthcare, which is sometimes greater than the cost of treatment. Occasionally, individuals who need to be evacuated, but who do not have the available funds, have to borrow from other people, sometimes at very high rates of interest. They may even be forced to sell goods, such as cattle, thereby jeopardizing the household's means of subsistence (6; 13). This system helps to avoid the scenario where a household becomes impoverished because of its health needs, with the unexpected treatment cost being borne by a single individual or household, or where patients forego treatment because they cannot pay to be evacuated. Our results are similar to those obtained by Ouedraogo C. et al., who worked on cost sharing for obstetric emergencies in a district of Ouagadougou in Burkina Faso. They found that the number of cases referred for obstetric emergencies was multiplied by six year-on-year (9).

This upward trend in health service usage is mainly for the benefit of under-fives and pregnant women. The cross-subsidy for medical evacuations is also favorable to the target population, further reinforcing the equitable nature of the approach. With the fixed obstetric charge introduced in Mauritania, we find the same upward trend (10).

This experiment allowed us to calculate the average cost of an evacuation, which is in the order of 37 euros, beyond the means of the vast majority of rural households in Niger, where, according to the HDI data, some 85% of the population live below the poverty line, on less than 2 dollars a day (4). Thanks to this approach, a form of equity has been promoted through the solidarity-based financing of medical evacuations by encouraging cross-subsidies. This is an efficient financing mechanism because it generates resources in sufficient quantity to make other sources of funding unnecessary, with the maximum being reserved for evacuations (3).

Whether such an approach can last – i.e. whether it can maintain its level of financing over the long term, and indeed increase it to keep pace with evolving health needs (7) – depends on the ability and willingness of the population to pay that extra centime. In any event, this approach reinforces the move to lift the financial barrier, by pleading in favor of covering the cost of medical evacuations.

## 5. Limits of the study

The field-level presence of an international NGO certainly contributed to the achievement of these encouraging results, especially as it financed, for several months, the "extra centime" payment for the free-healthcare target groups, a contribution that amounts to some 70% of the funds collected. The question that now arises is whether the target population should or should not pay that centime. If not, then alternatives must be sought in order to make good the difference. One possible solution might be to integrate the extra centime into the reimbursement of expenses for free healthcare provision, or to find a community-level mechanism, levying the money through local authorities.

We were not able to analyze qualitative data on the outcomes for the evacuated patients, or users' assessments of the new system, but we did hear some highly positive opinions while supervising the program, such as this, from a man in Tamaske: "*Since this medical evacuation system was set up, there's no longer any worry: no need to sell a goat or a sheep for serious or complicated cases that require evacuation. You just go to the health post or IHC, and if the solution to your health problem is in Keita or Tahoua, the ambulance takes you there without you having to pay anything*".

One question remains, however: How much longer will the fund have surplus reserves if the number of cases for evacuation continues to rise (or will it still be able to break even)?

## 6. Conclusion

It can clearly be stated that the introduction of a solidarity-based financing mechanism led to an increase in the number of cases evacuated. This experiment also established an estimate for the average cost of evacuating a patient, which remains high – beyond the means of most rural households. In other words, policies designed to abolish direct user fees, by integrating the cost of medical evacuation, provide an effective strategy for covering health risks and preventing the impoverishing effects of poor health. To achieve this, African countries need to adopt effective healthcare financing strategies in line with their economic, social and cultural realities, and their efforts must be supported by the development partners, for equitable access to high-quality healthcare.

## References

1. McIntyre, D. (2007). Enseignements tirés de l'expérience : le financement des soins de santé dans les pays à faibles et moyens revenus. Global Forum for Health Research, June. Genève, Suisse.
2. Gilson, L., *et al*. (2001). Strategies for promoting equity: experience with community financing in three African countries. Health Policy, 58(1), 37-67.
3. Hoare G & Mills A. (1986). Paying for the health sector: A review and annotated bibliography of the literature on developing countries. Evaluation and Planning Centre for Health Care. Publication N°12. London: EPC, London School of Hygiene and Tropical Medicine. http://id.erudit.org/iderudit/010889ar
4. http://www.undp.org/africa/programmedocs/NIGER-CPD-2009-2013.pdf
5. Leighton, C. and F. Diop (1995). Protecting the poor in Africa: Impact of Means Testing on Equity in the Health Sector in Burkina Faso, Niger, and Senegal?, Health Financing and Sustainability (HFS) Project - Abt Associates Inc.: Bethesda MD. p. 29.
6. McIntyre, D., Gilson, L. and Mutyambizi, V. Harare (2005). Promoting equitable health care financing in the African context: Current challenges and future prospects. Regional Network for Equity in Health in Southern Africa (EQUINET).

7. McPake, B. and Kutzin, J. (1997). Methods for evaluating health system performance and the effects of reform. Geneva, World Health Organization.
8. Morestin F & Ridde V. (2009). L'abolition du paiement des services de santé en Afrique. Ce que nous apprennent les écrits scientifiques. Université de Montréal.
9. Ouédraogo C. & al. (2008). Partage des coûts pour les urgences obstétricales dans le district sanitaire du secteur 30, Ouagadougou, Burkina Faso. Studies in HSO&P, 25: 55-89.
10. Renaudin P. & al. (2008). La mutualisation du risque comme solution à l'accès aux soins obstétricaux d'urgence. Expérience du forfait obstétrical en Mauritanie. Studies in HSO&P, 25: 93-125.
11. Ridde, V. (2004). Kingdon à Bamako : conceptualiser l'implantation d'une politique publique de santé en Afrique. Politique et Sociétés, 23(2-3), 183-202.
12. Ridde, V. (2008). The problem of the worst-off is dealt with after all other issues: The Equity and Health Policy Implementation Gap in Burkina Faso. Social Science and Medicine, 66, 1368-1378.
13. Russell, S. (2004). The economic burden of illness for households in developing countries: A review of studies focusing on malaria, tuberculosis and Human Immunodeficiency studies focusing on malaria, tuberculosis and Human Immunodeficiency Virus/Aquired Immunodeficiency Syndrome. American Journal of Tropical Medicine and Hygiene, 7, 147-155.